

ture was above the water temperature during the daytime, but became lower than that of the water at night. The decisive influence on amphibians is exerted by the temperature of the air, because it is the temperature on the head that determines calling behaviour, as found in *Bombina bombina* (SCHNEIDER 1976). However, when individual tree frogs were in close contact with the water while calling, the higher water temperature may have affected the calls to some extent.

Although some differences between the advertisement calls of *H. intermedia* and *H. a. arborea* are significant they are slight. The duration of the pulse groups is almost the same in both species, with no difference in the lower part of the temperature range and only a small one in the higher part. The confidence intervals overlap over a large proportion of the measurement region (Fig. 6). *H. intermedia* has 8.55 pulses per pulse group; although this is lower than the 9.10 pulses/group found for *H. a. arborea*, this difference does not noticeably affect the duration of the pulse groups. The main detectable difference is that of the intervals separating the pulse groups (Fig. 7). The intervals are somewhat shorter in *H. intermedia* than in *H. a. arborea*. The bioacoustic studies of the advertisement calls appear not to support convincingly the new species, *H. intermedia*.

That the differences between the advertisement calls of *H. intermedia* and *H. a. arborea* are quite small is best shown by comparison with the tree frogs *H. savignyi* and *H. meridionalis* (Table. 2). These two species have very specific advertisement calls, which distinguish them unequivocally from *H. a. arborea*. The original assignment of species status to these two tree frogs was based on the striking differences in their mating calls (SCHNEIDER 1967, 1968, SCHNEIDER & NEVO 1972). The specificity of the advertisement calls enables the females of *H. meridionalis* and *H. savignyi* to distinguish a conspecific male reliably from a male *H. a. arborea* (SCHNEIDER, 1982, SCHNEIDER et al. 1984). Conversely, the fact that the differences between the advertisement calls of *H. intermedia* and *H. a. arborea* are so slight raises the crucial question whether the females of the two species are able to distinguish between the advertisement calls of their own species and that of the other one.

According to NASCETTI et al. (1995), *H. intermedia* and *H. a. arborea* are parapatric in the east – the boundaries of their ranges coincide quite closely with the borders between Italy and Slovenia. Hence it is unlikely that the advertisement calls of the two species there would be more different from one another than they are in the populations studied here.

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REFERENCES

- BRZOSKA, J., SCHNEIDER, H. & NEVO, E. (1982): Territorial behavior and vocal response in male *Hyla arborea savignyi* (Amphibia: Anura). *Israel Journal of Zoology* **31**: 27-37.
- MERTENS, R. & WERMUTH, H. (1960). *Die Amphibien und Reptilien Europas*. Verlag Waldemar Kramer, Frankfurt am Main.
- NASCETTI, G., LANZA, B. & BULLINI, L. (1995): Genetic data support the specific status of the Italian treefrog (Amphibia: Anura: Hylidae). *Amphibia-Reptilia* **16**: 215-227.
- OLIVEIRA, M. E., PAILLETTE, M., ROSA, H. D. & CRESPO, E. G. (1991): A natural hybrid between *Hyla arborea* and *Hyla meridionalis* detected by mating calls. *Amphibia-Reptilia* **12**: 15-20.
- SCHNEIDER, H. (1966): Die Paarungsrufe einheimischer Froschlurche (Discoglossidae, Pelobatidae, Bufonidae, Hylidae). *Zeitschrift für Morphologie und Ökologie der Tiere* **57**: 119-136.
- SCHNEIDER, H. (1967): Rufe und Rufverhalten des Laubfrosches, *Hyla arborea arborea* (L.). *Zeitschrift für vergleichende Physiologie* **57**: 174-189.
- SCHNEIDER, H. (1968): Bio-akustische Untersuchungen am Mittelmeerlaubfrosch. *Zeitschrift für vergleichende Physiologie* **61**: 369-385.
- SCHNEIDER, H. (1974): Structure of the mating calls and relationships of the european tree frogs (Hylidae, Anura). *Oecologia* (Berlin) **14**: 99-110.
- SCHNEIDER, H. (1976): The effect of local heating on the calls of the fire-bellied toad, *Bombina bombina* (L.). *Behavioural Processes* **1**: 135-144.
- SCHNEIDER, H. (1977): Acoustic behavior and physiology of vocalization in the european tree frog, *Hyla arborea* (L.). Pp. 295-335 in: TAYLOR, D. H. & GUTTMAN, S. I. (eds.) *The reproductive biology of Amphibians*. Plenum Press Corp., New York, 295-335.
- SCHNEIDER, H. (1978): Der Paarungsruf des Teneriffa-Laubfrosches: Struktur, Variabilität und Beziehung zum Paarungsruf des Laubfrosches der Camargue (*Hyla meridionalis* Boettger, 1874, Anura, Amphibia). *Zoologischer Anzeiger, Jena* **201**: 273-288.
- SCHNEIDER, H. (1982): Phonotaxis bei Weibchen des Kanarischen Laubfrosches, *Hyla meridionalis*. *Zoologischer Anzeiger, Jena* **208**: 161-174.
- SCHNEIDER, H. & Inst. Wiss. Film (1985): Akustische Orientierung beim Weibchen des Mittelmeer-Laubfrosches. Film C 1500 des IWF, Göttingen 1983. Publikation von H. Schneider, Publikationen zu wissenschaftlichen Filmen, Sektion Biologie, Serie 17, Nr. 21/C 1500 (1985), 13 S.
- SCHNEIDER, H. & NEVO, E. (1972): Bio-acoustic study of the yellow-lemon treefrog, *Hyla arborea savignyi* Audouin. *Zoologische Jahrbücher, Abteilung Physiologie* **76**: 497-506.
- SCHNEIDER, H., NEVO, E., HETH, G., SAMSON, S. & BRZOSKA, J. (1984): Auditory discrimination tests of female near eastern tree frogs and reevaluation of the systematic position (Amphibia, Hylidae). *Zoologischer Anzeiger, Jena* **213**: 306-312.

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Notes on Neotropical Alticinae (Coleoptera, Chrysomelidae)

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Abstract: A list of Alticinae from Hispaniola is given with descriptions of one new genus and six new species, as well as one new species from Brasilia.

Key words: South America, flea beetles, taxonomy, biogeography, new taxa.

1. INTRODUCTION

The article proposed is based mostly on material collected by J. & S. Klapperich on the island of Hispaniola and deposited in the Basel Museum of Natural History; as well as one new species from Brasilia was found in the Stuttgart Natural History Museum.

The following abbreviations for depository locations are used:

NHMB – Naturhistorisches Museum, Basel

SMNS – Staatliches Museum fuer Naturkunde, Stuttgart

LM – author's collection.

2. TAXONOMY

2.1. Island of Hispaniola

Hirtasphaera Medvedev, gen. n.- (Fig. 1)

Description. Body elongate, distinctly flattened above. Head impunctate, frontal tubercles subquadrate, interantennal ridge high, frons narrow, as wide as eye, clypeus elevated posteriorly, vertex with longitudinal impressed line, eyes round. Antennae filiform, reaching middle of elytra. Prothorax transverse quadrangular, much narrower than elytra at base, all angles distinct, with setiferous pore, but not produced (Fig. 1), surface without transverse basal groove. Elytra elongate, impunctate, without basal convexity, with dense erect hairs. Epipleurae broad, horizontal, in lateral view seem only in anterior third. Prosternum flat, narrowed in middle. Mesosternum with hind margin arcuately emarginate. Metasternum neither marginate nor elevate anteriorly. Last abdominal sternite of male with dark longitudinal line. Hind femora twice as long as wide, hind tibia 1.5 times as long as width of femur, with small preapical tooth

followed with shallow excavation on outer margin. Spur short and thick. Hind tarsus: segment 1 about 2.5 times shorter than tibia, last segment globular on apex.

Diagnosis. This new genus is similar to *Asphaera* Chevrolat, 1842, but it differs well in pubescent elytra, not produced anterior angles of rather narrow prothorax and globular apex of last segment on hind tarsi. In any case, I don't know any species or genus in Oedionychini with pubescence on the elytra.

Type species: *Hirtasphaera hirsuta*, sp. n.

Hirtasphaera hirsuta L. Medvedev, sp. n. (Figs 2, 3)

Holotype (male): Dominican Republic, Constanza, 1250 m, 10. V. 1972, leg. J. & S. Klapperich (NHMB).

Paratypes: same locality, 1 male (LM), 1 female (NHMB).

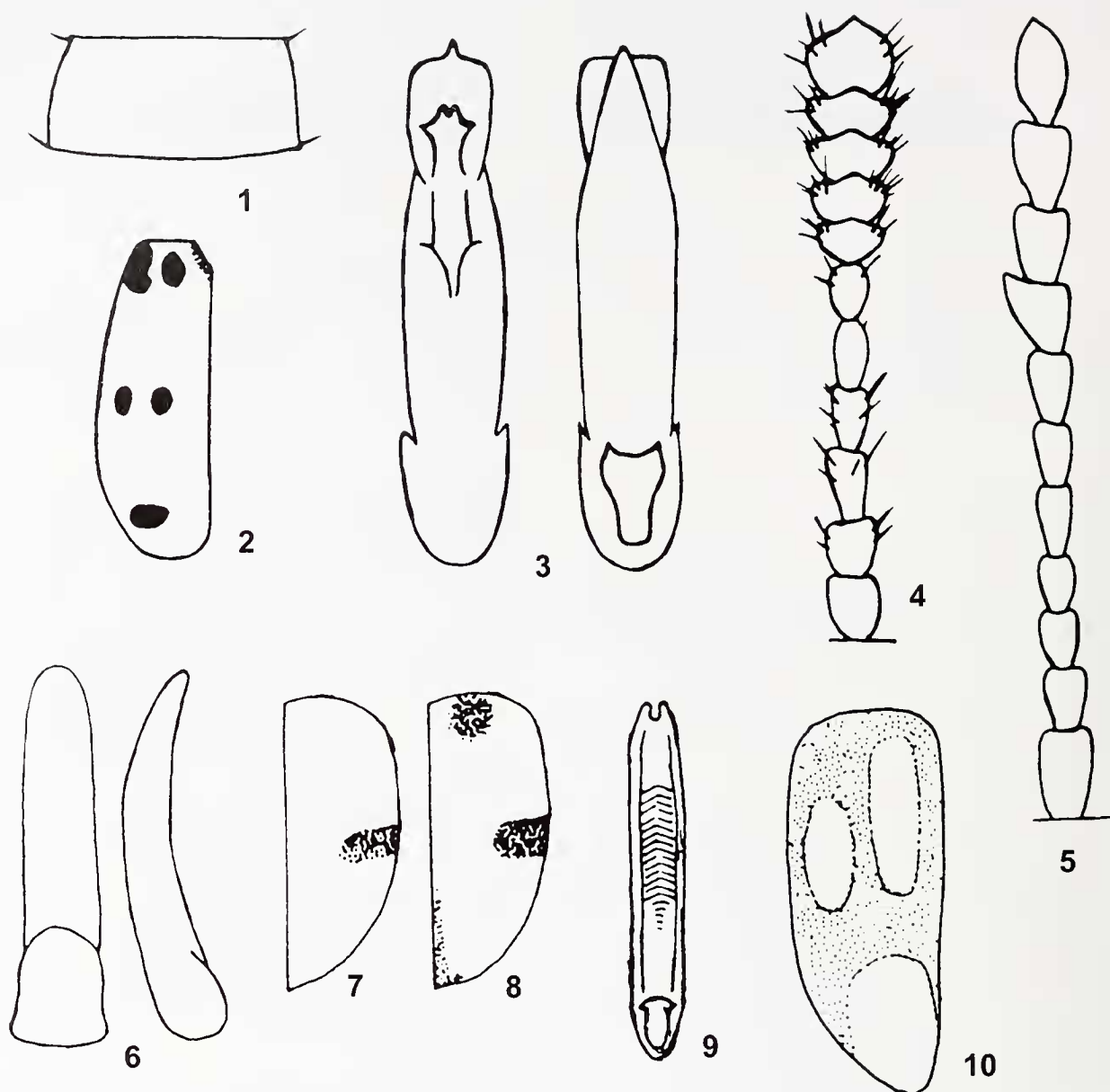
Description: Pale flavous; antennal segments 7-9, apical part of segment 6 and scutellum black, elytra with 5 dark metallic spots (2, 2, 1; Fig. 2) and narrow dark emargination around scutellum.

Head feebly shining, frontal tubercles with dense microsculpture. Proportions of antennal segments: 11-4-7-8-10-10-10-8-8-8-11. Prothorax 2.1 times as wide as long, anterior margin practically straight, lateral margins straight, subparallel, broadly explanate; surface impunctate, shining. Elytra 1.5 times as long as wide. Aedeagus – fig. 3. Length 6.4 mm, width 3.3 mm.

Homophaeta albicollis (Fabricius, 1787)

Material: Dominican Republic, Colonia, 1000 m, 18. III. 1972; leg. J. & S. Klapperich, 1 ex.; – Constanza, 7.VII. 1972, leg. J. & S. Klapperich, 1 ex. (NHMB).

General distribution: South America and West Indies, including Haiti and Dominican Republic (BLAKE 1931).



Figs. 1-3 *Hirtasphaera hirsuta*: 1 prothorax, 2 elytral pattern, 3 aedeagus dorsal and ventral.

Fig. 4 *Distigmoptera antennata*, antenna

Fig. 5 *Centralaphthona dominicana*, antenna

Fig. 6 *Apraea oculata*, aedeagus ventral and lateral

Figs. 7-9 *Leptophysa ornata*: 7 & 8 elytral pattern, 9 aedeagus ventral

Fig. 10 *Megistops sexmaculata*, elytral pattern

***Kuschelina cincta* (Olivier, 1789)**

Material: Dominican Republic, Colonia, 1000 m, 10.III.-21.IV.1972, leg. J. & S. Klapperich, 10 ex. (NHMB).

Remarks: This series includes both colour forms: with fulvous stripe in middle of elytra and fulvous type with blue apex of elytra.

General distribution: West Indies.

***Kuschelina purpurella* (Blake, 1940)**

Material: Dominican Republic, Colonia, 1000 m, 10-18.III.1972, leg. J. & S. Klapperich, 1 ex. (NHMB).

General distribution – Endemic to Hispaniola.

***Distigmoptera antennata* Medvedev, sp. n. (Fig. 4)**

Holotype: Dominican Republic, Cazabita, 1250 m, 17. X. 1971, leg. J. & S. Klapperich (NHMB).

Description: Dark brown to pitch brown with lighter coloured legs, antennal segment 5 white, prothorax almost black with dark brown hind margin. Pubescence dark on head and prothorax, white or fulvous on elytra.

Body robust. Head coarsely and rugosely punctate, frontal tubercles indistinct. Antennae short, reaching only humeral tubercles, covered with rather long erect hairs,

segments 1 and 2 thick, 3 as long as 2, but much thicker, 4 and 5 equal, shorter than 3, 6 the shortest and globular, 7-11 strongly widened, 7-10 transverse, 11 as long as wide (Fig. 4). Prothorax 1.3 times as wide as long, lateral margins almost straight, anterior angles acute and produced, hind margin arcuate, surface uneven, with two blunt tubercles in middle, divided with longitudinal impression; a few impressions also near hind angles and along base; disc very densely and coarsely punctate. Elytra 1.3 times as long as wide, slightly broadened to behind, with high basal convexity delimited behind with oblique impression, humerus strong, elytral rows of punctures deep, strong and regular, interspaces smooth, rather shining, flat or feebly convex. Length 2.3 mm.

Diagnosis. As in the genus, but with unusual colour of the antennae.

***Disonycha glabrata* (Fabricius, 1775)**

Material: Dominican Republic, Santo Domingo, 30 m, 6. XII. 1970, leg. J. & S. Klapperich, 1 ex. (NHMB).

General distribution: Widespread in North and South America, including West Indies.

***Disonycha texana* Schaeffer, 1919**

Material: Dominican Republic, Boca Chica, 10 m, 3. VI. 1972, leg. J. & S. Klapperich, 2 ex. (NHMB).

General distribution: Widespread in south-east USA and Mexico; according to BLAKE (1933) it might be a variation of *D. leptolineata* Blatchley, 1917. First record for Hispaniola.

***Systema basalis* Jackelin du Val, 1856**

Material: Dominican Republic, Santo Domingo, 30 m, 6. XII. 1970, leg. J. & S. Klapperich, 7 ex. (NHMB).

General distribution: Widespread in West Indies, Central America.

***Centralaphthona elachia* (Blake, 1948)**

Material: Dominican Republic, Colonia, 1000 m, 18. III. 1972, leg. J. & S. Klapperich, 3 ex. (NHMB).

General distribution: Haiti (only 2 females were known); first record for Dominican Republic.

***Centralaphthona dominicana* Medvedev, sp. n.
(Fig. 5)**

Holotype (male): Dominican Republic, Boca Chica, 10 m, 21. X. 1971, leg. J. & S. Klapperich (NHMB).

Paratypes: same locality, 6-21. X. 1971, leg. J. & S. Klapperich, 20 ex. (NHMB, 3 ex. — LM).

Description: Dark fulvous with antennal segments 5-11 pitch black.

Head impunctate, clypeus convex, interantennal ridge rather broad, flattened. Frontal tubercles sharply delimited, rounded-triangular, feebly convex. Antennae short, reaching a little behind humerus, segments 2-10 more or less subequal in length, 2-6 about 1.5 times as long as wide, next segments thickened and almost subquadrate; in male segment 8 triangularly widened (Fig. 5). Prothorax 1.5 times as wide as long, lateral margins almost straight; divergent to front and angulate in anterior fifth; surface shining, finely and sparsely punctate. Elytra 1.3 times as long as wide, slightly rounded on sides and broadly rounded on apex, with regular rows of fine punctures, very feeble in apical part and on sides; interspaces flat. Length 1.2-1.3 mm.

Diagnosis: This species belongs to the *C. insolita* group (*C. insolita* Melshemer 1847, *C. fulvipennis* Jacoby 1892 from continental North America and seven species from West Indies, described by BLAKE). They might be divided as follows:

Key

- 1(2) Upperside fulvous with dark pattern. Puerto Rico.
C. crucifera (Blake, 1964)
- 2(1) Upperside entirely fulvous.
- 3(4) Antennae fulvous with a few intermediate segments (6-9, 8-9 or 8-10) black.
C. fraterna (Blake, 1948), Haiti
C. elachia (Blake, 1948), Haiti
C. schwarzi (Blake, 1949) Cuba
- 4(3) Antennae without black intermediate segments.
- 5(6) Antennae pitch black with 4 basal segments fulvous; segment 8 triangularly widened in male. Length 1.2-1.3 mm. Dominican Republic.
C. dominicana, sp. n.
- 6(5) Antennae fulvous with slightly darkened apical segments;
segment 8 simple.
- 7(8) Body larger, about 1.8 mm. Puerto Rico.
C. inornata (Blake, 1949)
C. lepta (Blake, 1964)
- 8(7) Body small, about 0.3 mm. Cuba.
C. nana (Blake, 1949)

All these species were originally assigned to *Aphthona* Chevrolat, 1837 and later transferred to the genus *Centralaphthona* Bechyne, 1960. This Neotropical genus, being rather distinct, is very alike the Oriental genus *Manobidia* Chen, 1934.